

DELAWARE VALLEY MASS SPECTROMETRY  
DISCUSSION GROUP



TO PROMOTE THE UNDERSTANDING AND PRACTICE OF MASS SPECTROMETRY  
IN THE DELAWARE VALLEY

*Unraveling the structural complexity of gangliosides  
using SLIM based High Resolution Ion Mobility  
Coupled to LC-MS*

David Williamson

Co-op at Merck and PhD Candidate at the University of Utah

**Wednesday, November 15<sup>th</sup>, 2023 at 6 pm**

**Waters Corporation**

**5205 Militia Hill Rd, Suite #100**

**Plymouth Meeting, PA 19462**

**Please RSVP to [Noelle Elliott@waters.com](mailto:Noelle_Elliott@waters.com), refreshments provided with 6:30 pm  
presentation start**

**Abstract:** Gangliosides, abundant lipids in the central nervous system (CNS), play a role in CNS conditions such as Alzheimer's, Parkinson's, Huntington's diseases, and multiple sclerosis. Analyzing gangliosides is highly challenging due to their isomeric heterogeneity, which involves structural motifs from both oligosaccharides and lipids. To address this, we use high-resolution SLIM-based separations coupled with liquid chromatography-mass spectrometry on the MOBIE device to separate gangliosides in the gas phase. Our aim is to create a high-resolution library of CCS values for endogenous gangliosides, enhancing their identification in the CNS.